

## Second Update to the Survey of Macrolepidopteran Moths Near Vontay, Hanover County, Virginia

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### INTRODUCTION

This paper provides a second update to the list of macrolepidopteran moth (= "macro-moth" or "macro") species collected at a site on the Virginia Piedmont, 2 km W of Vontay in western Hanover County. A description of the study site, methodology, and original species list were given in Ludwig (2000) and the first update was provided in Ludwig (2001). The new collections extend the study to five years (30 October 1996 to 30 October 2001) and increase the number of collection nights to >470. The species list from this study, along with others being gathered throughout Virginia by the Virginia Department of Conservation and Recreation's Division of Natural Heritage, is being used to ascertain the biological status and develop a complete list of the Commonwealth's macro-lepidopteran moths.

### RESULTS AND DISCUSSION

A total of 82 macrolepidopteran moth specimens was pinned and identified during the extended study period, bringing the total number of collected specimens at this site to 2,170. These collections increased the number of species documented at this site from 521 to 530 and the number of genera from 298 to 300 (Table 1 and Appendix). The Noctuidae (310 species) and Geometridae (103) were most diverse with the Arctiidae (34) and Notodontidae (33) also rich.

An updated species-accumulation curve (Fig. 1) for this study indicates that additional macros will be recorded at the site should collections continue. Depending upon the projected trajectory of the curve, estimates of the total number of taxa recorded from this site over 10 years range from 570-680 macro-moth species, representing perhaps as much as 50% of the state's estimated total macro fauna.

Noted as absent from the site's original collections (Ludwig, 2000), two Eurasian moth species have now been recorded at the study site. A single *Noctua pronuba* L. was found on 29 May 2000 (Ludwig, 2001), reinforcing its status as a widespread, recent introduction to Virginia (Roble et al., 1999). A male gypsy moth, *Lymantria dispar* L., was found on 3 July 2001, presumably representing the first of many to inhabit the site as the line of infestation moves south and east from the northwestern Virginia Piedmont.

Table 1. Summary of macro-moths encountered during this study by family given in order of Hodges et al. (1983).

Family	Genera	Species	Specimens
Thyatiridae	2	2	9
Drepanidae	3	3	7
Geometridae	69	103	394
Epiplemidae	2	2	5
Mimallonidae	1	1	6
Apatelodidae	2	2	4
Lasiocampidae	4	5	8
Saturniidae	10	11 <sup>a</sup>	12
Sphingidae	12	18 <sup>b</sup>	33
Notodontidae	18	33	138
Arctiidae	18	34	94
Lymantriidae	3	6	26
Noctuidae	158	310	1434
TOTALS	300	530	2170

<sup>a</sup> Four species documented by sight records only

<sup>b</sup> One species documented by sight record only

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Wedge Entomological Foundation, London. 284 pp.

## LITERATURE CITED

Covell, C. V., Jr. 1999. The Butterflies and Moths (Lepidoptera) of Kentucky: An Annotated Checklist. Kentucky State Nature Preserves Commission, Scientific and Technical Series 6. 220 pp.

Ludwig, J. C. 2000. A survey of macrolepidopteran moths near Vontay, Hanover County, Virginia. *Banisteria* 15: 16-35.

Ludwig, J. C. 2001. An update to the survey of macrolepidopteran moths near Vontay, Hanover County, Virginia. *Banisteria* 17: 42-47.

Hodges, R. W., T. Dominick, D. R. Davis, D. C. Ferguson, J. G. Franclemont, E. G. Munroe, & J. A. Powell. 1983. Check List of the Lepidoptera of America North of Mexico. E.W. Classey Ltd. & The

Rings, R.W., E.H. Metzler, F.J. Arnold, & D.H. Harris. 1992. The Owllet Moths of Ohio Order Lepidoptera Family Noctuidae. Ohio Biological Survey Bulletin. New Series 9 (2). 219 pp.

Roble, S. M., A. C. Chazal, C. S. Hobson, & J. C. Ludwig. 1999. First records of *Noctua pronuba* L., an Old World moth, in Virginia (Lepidoptera: Noctuidae). *Banisteria* 14: 45-47.

Appendix. Additional macro-moth species identified during this study given in order of Hodges et al. (1983). Fields are: checklist number, species name, collection date (month/day/year), method (s=sugar bait, b=black light, i=incandescent light, m=mercury vapor light); numbers in parentheses indicate if number of specimens is > 1 for a given date and survey method. Asterisks denote species new for the study.

**Drepanidae**

6251 *Drepana arcuata* (Wlk.) 04/06/01 m

**Geometridae**

6258 *Alsophila pometaria* (Harr.) 02/20/01 i  
 \*6405 *Semiothisa gnophosaria* (Gn.) 05/25/01 m  
 6586 *Anacamptodes defectaria* (Gn.) 04/17/01 m  
 6662 *Paleacrita vernata* (Peck) 02/20/01 i  
 6843 *Plagodis fervidaria* (H.-S.) 07/08/01 m  
 6885 *Besma quercivoraria* (Gn.) 05/02/01 m  
 6894.x *Lambdina athasaria* (Wlk.) complex  
 04/17/01 m  
 7033 *Nemoria lixaria* (Gn.) 09/25/01 m  
 7132 *Pleuroprucha insularia* (Gn.) 09/25/01 i  
 7196 *Eulithis diversilineata* (Hbn.) 07/14/01 m  
 7292 *Hydria prunivorata* (Fgn.) 06/12/01 m  
 \*7638 *Cladara angulinea* (Grt.&Rob.) 04/06/01 m

**Saturniidae**

7765 *Callosamia angulifera* (Wlk.) 06/16/01 m,  
 07/13/01 m

**Sphingidae**

\*7786 *Ceratomia amyntor* (Geyer) 07/28/01 m

**Notodontidae**

\*7896 *Clostera inclusa* (Hbn.) 04/06/01 m  
 7931 *Gluphisia septentrionalis* (Wlk.) 05/15/01 m  
 7999 *Lochmaeus bilineata* (Pack.) 08/13/01 m

**Arctiidae**

8104 *Comachara cadburyi* Franc. 05/02/01 m

**Lymantriidae**

8314 *Orgyia definita* Pack. 07/06/01 m,  
 07/28/01 m, 10/06/01 m (2)  
 \*8318 *Lymantria dispar* (L.) 07/03/01 m

**Noctuidae**

8338 *Phalaenophana pyramusalis* (Wlk.) 05/25/01 m  
 8426 *Dyspyralis illocata* Warr. 06/11/01 m

## Noctuidae (continued)

8499 <i>Metalectra discalis</i> (Grt.)	09/10/01 m	9427 <i>Meropleon diversicolor</i> (Morr.)	09/25/01 m
8505 <i>Metalectra richardsi</i> Brower	07/12/01 m	9466 <i>Papaipema cataphracta</i> (Grt.)	10/03/01 i, 10/16/01 i, 10/20/01 i
8525 <i>Phyprosopus callitrichoides</i> Grt.	07/24/01 m	9485 <i>Papaipema baptisiae</i> (Bird)	09/18/00 m
8692 <i>Zale galbanata</i> (Morr.)	07/24/01 m	9501 <i>Papaipema eupatorii</i> (Lyman)	10/03/01 i
*8703 <i>Zale duplicata</i> (Bethune)	04/03/01 m	9556 <i>Chytonix palliatricula</i> (Gn.)	05/25/01 m
8792 <i>Catocala vidua</i> (J.E. Sm.)	09/25/01 m	9688 <i>Galgula partita</i> Gn.	07/01/01 m, 07/04/01 m (2), 07/06/01 m, 07/14/01 m
8849 <i>Catocala andromedae</i> Gn.	07/06/01 m	9892 <i>Lithophane disposita</i> Morr.	10/20/01 i
8898 <i>Allagrapha aerea</i> (Hbn.)	07/28/01 m	9961 <i>Anathix ralla</i> (Grt. & Rob.)	09/10/01 m
8904 <i>Chrysanympha formosa</i> (Grt.)	06/11/01 m	10021 <i>Copivaleria grotei</i> (Morr.)	04/06/01 m
8907 <i>Megalographa biloba</i> (Steph.)	05/15/01 m	10304 <i>Trichordestra legitima</i> Grt.	09/01/01 m
8959 <i>Paectes pygmaea</i> (Hbn.)	08/13/01 m	10368 <i>Lacinipolia meditata</i> (Grt.)	09/20/01 m
8962 <i>Paectes abrostoloides</i> (Gn.)	10/16/01 i	10397 <i>Lacinipolia renigera</i> (Steph.)	09/20/01 m
9037 <i>Hyperstrotia pervetens</i> (B.&McD.)	06/05/01 m	10501 <i>Crocigrapha normani</i> (Grt.)	04/17/01 m
9038 <i>Hyperstrotia villificans</i> (B.&McD.)	05/15/01 m (2)	10502 <i>Himella intractata</i> (Morr.)	04/12/01 m
9040 <i>Hyperstrotia secta</i> (Grt.)	05/15/01 m	10518 <i>Achatia distincta</i> Hbn.	04/12/01 m, 05/02/01 m
9051 <i>Lithacodia musta</i> (Grt.&Rob.)	06/05/01 m, 08/13/01 m	10521.1 <i>Morrisonia latex</i> (Gn.)	05/02/01 m
9062 <i>Cerma cerintha</i> (Tr.)	06/10/01 m	10648 <i>Agrotis gladaria</i> Morr.	10/06/01 m
9169 <i>Bagisara rectifascia</i> (Grt.)	07/04/01 m	10915 <i>Peridroma saucia</i> (Hbn.)	04/14/01 m
*9221 <i>Acronicta funeralis</i> (Grt. & Rob.)	06/12/01 m	10944 <i>Xestia smithii</i> (Snell.)	09/24/01 m
9243 <i>Acronicta ovata</i> Grt.	07/28/01 m	10998 <i>Choephora fungorum</i> Grt. & Rob.	10/03/01 i
9244 <i>Acronicta modica</i> Wlk.	05/15/01 m	11006 <i>Protolampra brunneicollis</i> (Grt.)	09/25/01 m
9251 <i>Acronicta retardata</i> (Wlk.)	05/02/01 m	11128 <i>Schinia arcigera</i> (Gn.)	09/20/01 m
*9272 <i>Acronicta oblanita</i> (J.E. Sm.)	06/10/01 m	*11135 <i>Schinia rivulosa</i> (Gn.)	08/20/01 m

Figure 1. Species accumulation curve for macrolepidopteran moths encountered during this study.

